Decision Record

Environmental Assessment (EA) for Grazing Authorization, DOI-BLM-NM-P010-2014-009-EA

Decision: It is my decision to authorize the BLM Proposed Action as described in **DOI-BLM-NM-P010-2014-009-EA**. The proposed action will authorize a grazing permit for 300 Animal Units at 38% Federal Range for 1332 Animal Unit Months (AUM's) active use. Class of livestock will include cattle and horses. The mitigation measures identified in the attached EA have been formulated into terms and conditions that will be attached to the grazing permit. This decision incorporates, by reference, those conditions identified in the attached Environmental Assessment. A summary table follows:

Table 1. Animal Units/Animal Unit Months

Allot #	Allot Name	Acres of Public Land	Acres of Private & State Land	% Public Land	Animal Units Authorized	Animal Unit Months Authorized	Class of Livestock	Livestock Number
64073	Felix River Ranch	6061	9959	37	297	1319	Cattle	297
64073	Felix River Ranch				3	13	Horse	3
Totals		**6061**	**9959**	**37**	**300**	**1332**		**300**

Rationale: Based on the rangeland health assessment (RHA) and previous monitoring, resource conditions on this allotment are sufficient and sustainable to support the level of use outlined in the ten year grazing permit.

If you wish to protest this proposed decision in accordance with 43 CFR 4160.2, you are allowed 15 days to do so in person or in writing to the authorized officer, after the receipt of this decision. Please be specific in your points of protest.

The protest shall be filed with the Field Manager, Bureau of Land Management, 2909 West 2nd, Roswell, NM 88201. This protest should specify, clearly and concisely, why you think the proposed action is in error.

In the absence of a protest within the time allowed, the above decision shall constitute my final decision. Should this notice become the final decision, you are allowed an additional 30 days within which to file an appeal for the purpose of a hearing before the Interior Board of Land Appeals, and to petition for stay of the decision pending final determination on the appeal (43

CFR 4.21 and 4.410). If a petition for stay is not requested and granted, the decision will be put in to effect following the 30-day appeal period. The appeal and petition for stay should be filed with the Field Manager at the above address. The appeal should specify, clearly and concisely, why you think the decision is in error. The petition for stay should specify how you will be harmed if the stay is not granted.

/s/ Jerry Dutchover . 04/07/2014

Jerry Dutchover
Assistant Field Manager, Resources

Date

FINDING OF NO SIGNIFICANT IMPACT:

I have determined that the BLM Proposed Action (Alternative A), as described in the Environmental Assessment (EA) will not have any significant impact, individually or cumulatively, on the quality of the human environment. Because there would not be any significant impact, an environmental impact statement is not required. The NEPA handbook (p. 83) indicates that the FINDING OF NO SIGNIFICANT IMPACT (FONSI) must succinctly state the reasons for deciding that the action will have no significant environmental effects. It also recommends that the FONSI address the relevant context and intensity factors.

In making this determination, I considered the following factors:

1. The activities described in the Proposed Action do not include any significant beneficial or adverse impacts (40 CFR 1508.27(b)(1)). The EA includes a description of the expected environmental consequences of issuing a term grazing permit on Allotment 64073.

2. The activities included in the proposed action would not significantly affect public health or safety (40 CFR 1508.27(b)(2)).

3. The proposed activities would not significantly affect any unique characteristics (40 CFR 1508.27(b)(3)) of the geographic area such as prime and unique farmlands, caves, wild and scenic rivers, designated wilderness areas or wilderness study areas.

4. The activities described in the proposed action do not involve effects on the human environment that are likely to be highly controversial (40 CFR 1508.27(b)(4)).

5. The activities described in the proposed action do not involve effects that are highly uncertain or involve unique or unknown risks (40 CFR 1508.27(b)(5)).

6. My decision to implement these activities does not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)).

7. The effects of issuing a ten year permit would not be significant, individually or cumulatively, when considered with the effects of other actions (40 CFR 1508.27(b)(7)). The EA discloses that there are no other connected or cumulative actions that would cause significant cumulative impacts.

8. I have determined that the activities described in the proposed action will not adversely affect or cause loss or destruction of scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places (40 CFR 1508.27(b)(8)). Cultural resource surveys in the allotment have been generally limited to inspections ahead of oil and gas related activities, such as well locations and pipelines. Many areas of the allotment have been generally inventoried for cultural resources. The existing cultural data for the allotment and adjacent areas seems to be a good example of what can be reasonably expected to occur in the

remainder of the allotment. No site-specific situations are known to exist where current grazing practices conflict with cultural resource preservation and management. Some mitigation is included in the proposed action to protect cultural resources from grazing practices, such as: "In the event that grazing practices are determined to have an adverse effect on cultural resources within the allotment, the BLM, in consultation with the permittee, will take action(s) to mitigate or otherwise negate the effects. This may include but is not limited to installing physical barriers to protect the affected cultural resources, relocating the livestock grazing practice(s) that is (are) causing the adverse effect(s), or any other treatment as appropriate. Page 21 of the EA describe the affected environment and impacts of the proposed action and alternatives on cultural resources.

9. The proposed activities are not likely to adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (40 CFR 1508.27(b)(9)). Within the allotment there are no known populations of threatened and endangered species, or designated critical habitat within the allotment.

10. The proposed activities will not threaten any violation of Federal, State, or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)). Page 2 of the EA describes the conformance with land use plans and relationships to statutes, regulations, or other plans.

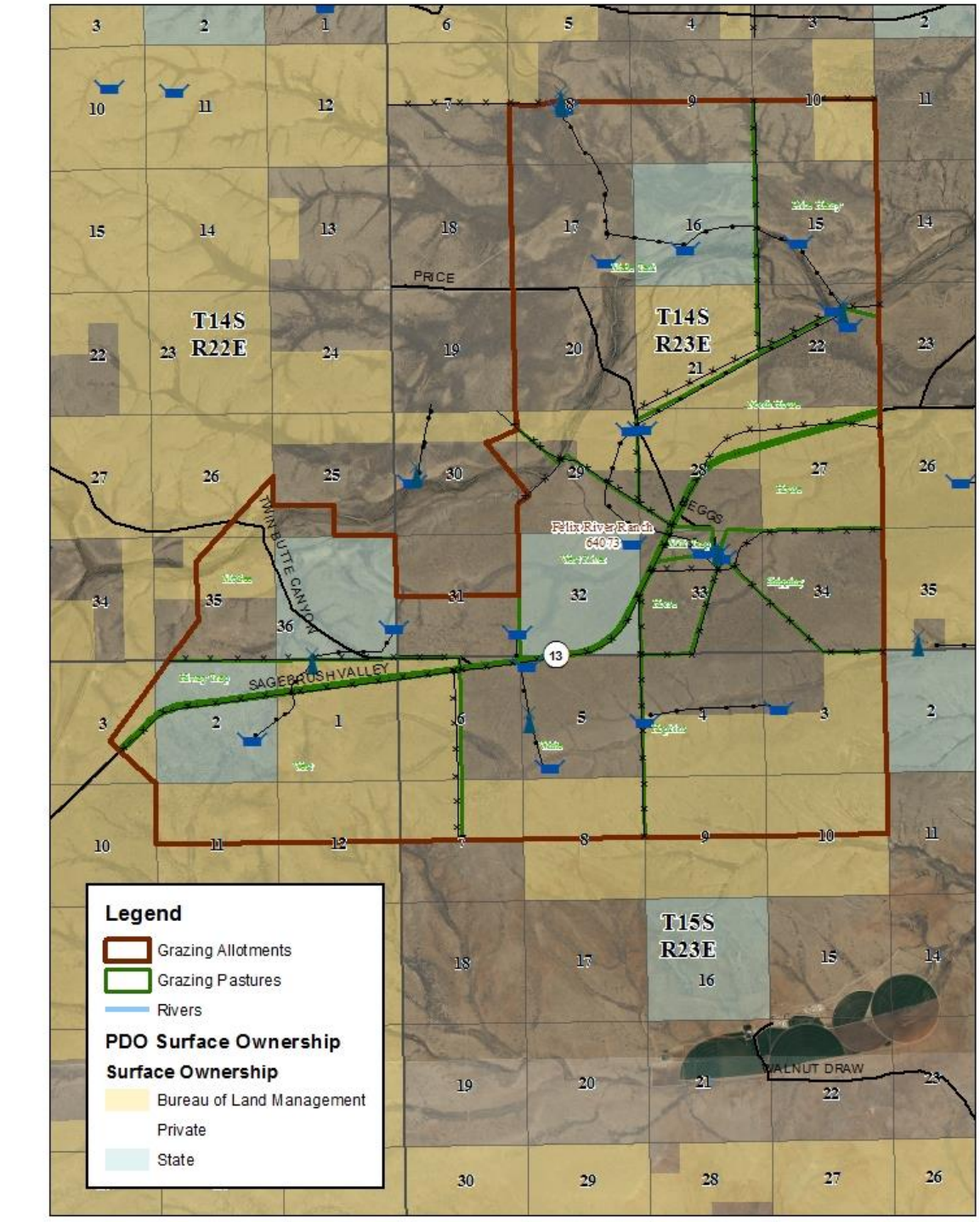
APPROVED:

/s/ Jerry Dutchover — 04/07/2014.
Jerry Dutchover — Date
Assistant Field Manager, Resources

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT, ROSWELL FIELD OFFICE

ENVIRONMENTAL ASSESSMENT, DOI-BLM-NM-P010-2014-009 EA
Allotment 64073 - Felix River

Allotment 64073 - Felix River Ranch



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ROSWELL FIELD OFFICE

ENVIRONMENTAL ASSESSMENT, DOI-BLM-NM-P010-2014-009 EA

Chapter 1 - Purpose & Need for Action

A. Introduction

This environmental assessment is limited to the effects of issuing a new grazing permit on this allotment. Over time, the need could arise for subsequent management activities which relate to grazing authorization. These activities could include vegetation treatments (e.g., prescribed fires, herbicide projects), range improvement projects (e.g., fences, water developments), and others. Future rangeland management actions related to livestock grazing would be addressed in project-specific NEPA documents as they are proposed.

Though this environmental assessment specifically addresses the impacts of issuing a grazing permit on this allotment, it does so within the context of overall BLM management goals. Allotment management activities would have to be coordinated with projects intended to achieve those other goals. For example, a vegetation treatment designed to enhance watershed condition or wildlife habitat may require rest from livestock grazing for one or more growing seasons. Requirements of this type would be written into the permit or lease as terms and conditions.

B. Purpose and Need for Action

The purpose of issuing a new grazing permit or lease would be to authorize livestock grazing on public range on Allotment 64073 Felix River. When authorizing livestock grazing on public range, the Bureau of Land Management (BLM) must conduct a site-specific NEPA analysis before issuing a permit to authorize livestock grazing. This environmental assessment fulfills the NEPA requirement by providing the necessary site-specific analysis of the effects of issuing a new grazing permit on this allotment. The permit would be needed to specify the types and levels of use authorized, and the terms and conditions of the authorization pursuant to 43 CFR §§4130.3, 4130.3-1, 4130.3-2, and 4180.1.

C. Decision to be Made

The Decisions to be made upon the completion of this Environmental Assessment are: to issue a Grazing permit and authorize grazing on Allotment 64073, Felix River; to authorize the level of grazing on this allotment and to authorize the classes of livestock grazing on this allotment.

D. Project Area Description

This allotment is located in the Rio Felix and Upper Pecos Long Arroyo watersheds, in Chaves County about 25 miles southwest of Roswell. See Location Map.

Elevations range from about 4,050 feet in the southwestern pasture of allotment 64073 to 3,772 feet along the northeastern boundary. The allotment is divided by NM Highway 13, Sagebrush Valley Road and contains portions of the Rio Felix, an ephemeral stream.

The climate is semi-arid with normal annual temperatures ranging from 20^0F to 95^0F, extremes of 29 below zero to 103 degrees are also possible. Average annual precipitation is approximately 13-16 inches in the form of rainfall and snow.

E. Relationship to Statutes, Regulations, and/or other Plans

The proposal to renew the livestock grazing permit on this allotment is in conformance with the 1994 Environmental Impact Statement for Rangeland Reform; the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1700 et seq.); the Taylor Grazing Act of 1934 (TGA) (43 U.S.C. 315 et seq.); the Public Rangelands Improvement Act of 1978 (PRIA) (43 U.S.C. 1901 et seq.); Federal Cave Resources Protection Act of 1988.

Chapter 2 - Proposed Action & Alternatives

A. Alternatives Considered but Not Analyzed in Detail

Grazing with reduced numbers – BLM considered authorizing grazing with reduced numbers on this allotment. Grazing with reduced numbers would produce impacts similar to the proposed action. Additionally, this allotment met the Standard for Public Land Health and monitoring studies do not indicate changes are necessary. Therefore, BLM will not analyze this alternative.

B. Description of Alternatives

Alternative A: Proposed Action (No Action) - Current Livestock Management

The proposed action is to issue a term permit to graze cattle, and horses on this allotment. The permitted use is based on long term monitoring and rangeland conditions from 1982 to current years data. Additionally a rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. See Table 1 below for details.

Table 1. Animal Units/Animal Unit Months								
Allot #	**Allot Name**	**Acres of Public Land**	**Acres of Private & State Land**	**% Public Land**	**Animal Units Authorized**	**Animal Unit Months Authorized**	**Class of Livestock**	**Livestock Number**
64073	Felix River Ranch	6061	9959	37	297	1319	Cattle	297
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Totals		**6061**	**9959**	**37**	**300**	**1332**		**300**

Alternative B: No-Grazing Alternative

Under this alternative a new grazing permit would not be issued for this allotment. No grazing would be authorized on federal land on this allotment under this alternative. Under this alternative and based on the land status pattern within the allotment, approximately 15 miles of new fences would be required to exclude grazing on the federal land.

C. Conformance with Applicable Land Use Plan

The proposed action conforms to the 1997 Roswell Approved Resource Management Plan (RMP) and Record of Decision; and the 2000 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management and Record of Decision as required by 43 CFR 1610.5-3.

Chapter 3 – Affected Environment, Environmental Effects, and Mitigation

A. Affected Resources

The following resources or values are not present or would not be affected by the authorization of livestock grazing on these allotments: Areas of Critical Environmental Concern, Cultural Resources, Native American Religious Concerns, Visual Resources, Prime or Unique Farmland, Minority/Low Income Populations, Hazardous or Solid Wastes, Wild and Scenic Rivers, and Wilderness. Cultural resources are not usually adversely affected by livestock grazing, although concentrated livestock activity such as around livestock water troughs can have adverse effects on the cultural resource. Prior to authorizing range improvements, a Class III Cultural Survey must be completed ensuring cultural resources will not be affected. There are several known cultural resources within these allotments. Affected resources and the impacts resulting from livestock grazing are described below.

1. Vegetation

Affected Environment

The allotment is comprised of several vegetation community types arranged in a mosaic over the allotment. Mixed grasslands with interspersed shrubs and half shrubs; and grassland savannah communities dominate. Perennial and annual forb production fluctuates widely from year to year. General objectives or guidelines for each vegetation community are described in the Roswell Approved RMP and Record of Decision (BLM 1997) and the Roswell Draft RMP/EIS (BLM 1994). The communities found within the allotment are Grasslands (GR), Mixed Desert Shrub (MDS) and Drainages, Draws and Canyons (DDC).

Grasslands are intermixed with shrub and half shrub communities. Grasslands are more common in the sandy and clay loam soil types. The typical grass communities consist of sideoats grama, black grama, hairy grama, three awn, vine mesquite, sand dropseed, tobosa, blue grama, muhly, burrograss, vine mesquite, NM feathergrass, and bottlebrush squirreltail. Alkali sacaton can be found in the drainages and draws. Shrub and half shrub communities are more prevalent, and sometimes dominate, in the soil types that are silt and cobbly loams with gravels common in the soil profile. The typical shrubs that are present include four wing saltbush, yucca, cholla cactus, winterfat, algerita, pinyon pine, and juniper.

The Rangeland Health assessment indicates a concern with invasive plants, most notably creosote with scattered pockets of catclaw. The Rangeland Health assessment for this allotment can be viewed at the Roswell Field Office.

Rangeland monitoring studies have been established in key areas within the allotments. Table 2 below lists the key areas, identified by the vegetation ID number, within each allotment as well as the ecological site associated with each key area. These permanent sites are used to track vegetation changes and to determine proper stocking rates

Table 2. Key Areas

ALLOTMENT NAME AND NUMBER	KEY AREA	ECOLOGICAL SITE
64073 – Felix River Ranch		
House	989	Shallow SD-3
Made Tank	990	Draw CP-4
North House	991	Shallow SD-3
Price Henry	992	Loamy SD-3
Hopkins	993	Shallow SD-3
West River	995	Shallow SD-3
West	996	Shallow SD-3
White	997	Shallow SD-3

The description for these ecological sites was developed by the Soil Conservation Service (now referred to as the Natural Resource Conservation Service) in their ecological site guides.

Ecological site descriptions are available for review at the Roswell BLM office, any Natural Resources Conservation Service office or accessed at www.nm.nrcs.usda.gov.

From 1978 to 1999 agencies were using the traditional range condition methodology to depict range condition. This compared collected rangeland monitoring information with the potential vegetation community in terms of species composition by weight. The rating is based on a scaled of 0 to 100 with 100 being the actual representative site.

In 1999 the Natural Resource Conservation Service (NRCS) revised the methodology for comparing the existing vegetation community with the potential vegetation community and to aid in the determination of ecological condition. This methodology is called the Similarity Index (SI). The BLM is currently incorporating this revision into the monitoring and evaluation processes. The SI compares existing vegetation data (collected from rangeland monitoring) with the potential vegetation community described in the NRCS ecological site guide for that site. The index is based on a scaled of 0 to 100 with 100 being the actual representative site. For example, the Sandy SD-3 ecological (range) site, the normal year production is about 900 pounds per acre. The index takes into account vegetation species present and the relative amount of production for each species when compared to the potential for the range site.

The Roswell Field Office is currently in the process of integrating the revised methodology into current monitoring and evaluation processes. The traditional range condition rating method (used from 1980 to 1998) is retained for comparison purposes. The percent bare ground and rock found on the allotment fall within the parameters established by the RMP/EIS for this vegetative community. Copies of the monitoring data and the analysis of the data are available at the Roswell Field Office. Rangeland Health Assessment data was collected in fiscal year 2013. Analysis of the rangeland health assessments indicates that all three indicators (biotic, hydrology, and soils) have been met for the allotment.

Noxious and Invasive Weeds: Noxious weeds affect both crops and native plant species in the same way, by out-competing for light, water and soil nutrients. Losses are attributed to decreased quality and quantity of agricultural products due to high levels of competition from noxious weeds and infestations. Noxious weeds can negatively affect livestock productivity by making forage unpalatable to livestock thus decreasing livestock productivity and potentially increasing producer's feed costs. Potential noxious weed species include musk thistle and Russian knapweed. Russian knapweed, hoary cress and musk thistle are documented along NM Highway 13. There are some scattered known populations of noxious weeds on this allotment.

Environmental Impacts

Under the proposed action the vegetation in the vegetative communities will continue to be grazed and trampled by domestic livestock as well as other herbivores. The area has been grazed by livestock since the early part of the 1900's, if not longer. Ecological condition and trend is expected to remain stable and/or improve over the long term at the permitted number of livestock.

Upland sites would reflect a static ecological condition trend at the existing permit level. Some grassland areas would remain static due to the influence of creosote, catclaw and cholla. In the long term, creosote or cholla treatments may be necessary to ebb the encroachment of creosote or cholla onto historical grassland sites.

Range monitoring data indicate that the vegetation is sustainable to meet multiple resource requirements and forage at the permitted use level under the Alternative A Proposed Action. Data indicate that livestock grazing is compatible with vegetation cover and composition objectives. In addition to the static trend in ecological condition, monitoring data show the vegetative resources have been maintained and sustained since monitoring began in 1981.

Under the No-Grazing Alternative, no impacts to vegetation resources would occur on public lands from authorized livestock grazing. Vegetation cover would increase over the long term in some areas. Grasslands in the uplands would increase in cover and composition, but composition would be tempered by mesquite somewhat dominating the shrub component. Alkali sacaton in the bottomlands would, in the short term, increase in cover and composition but would then taper off in the long term, becoming decadent from the lack of standing vegetation removal by grazing.

2. Soils

Affected Environment

The Soil Conservation Service, now the Natural Resource Conservation Service (NRCS), has surveyed the soils in Chaves County. Complete soil information is available in the Soil Survey of Chaves County, New Mexico, Southern Part (USDA Soil Conservation Service 1980) and online at http://websoilsurvey.nrcs.usda.gov/app/. The soil map units represented in the allotment area are:

Begetty-Pecos Association (BP): The Bigetty series of soils consists of deep, well drained soils formed in alluvium on channeled flood plains. Permeability is moderately slow, and the available water capacity is 11.5 to 12.5 inches. Effective rooting depth is 60 inches or more. This association occurs on the channel flood plains of the Rio Felix as it occurs within this allotment. This soil is rarely flooded, slopes are 0 to 1 percent. The association consists of about 60 percent Bigetty loam and silt loam, 20 percent Pecos silty clay loam, nonsaline and 20 percent less extensive soils. Runoff is slow, and the hazard of erosion is slight. A few areas along the stream channel are commonly flooded. These flooded area support a stand of giant sacaton.

Pecos-Dev Association (PH): The Pecos series consists of deep, moderately well drained soils. Permeability is very slow and available water capacity is 6 to 9 inches. Effective rooting depth is 66 inches or more. This association occurs in valleys of the limestone hills and along drainages. Slopes are 0 to 5 percent. The level to nearly level Pecos soil is on floodplains and is rarely flooded, while the Dev soils are frequently flooded. Runoff is medium or slow. The hazard of water erosion is moderate and the hazard of soil blowing is slight.

Pecos silty clay loam, nonsaline, 0-3% slopes (PGB): This level to nearly level soil occurs on flood plains that are rarely flooded and are in the limestone valleys. Runoff is medium or slow. The hazard of water erosion is moderate and the hazard of soil blowing is slight.

Reakor loam (RF) 0 to 3 percent slopes: The Reakor series also consists of deep, well drained soils. This level to nearly level soil occurs on the uplands. Permeability is moderate and available water capacity is 9 to 12 inches. Effective rooting depth is 65 inches or more. Runoff is medium. The hazard of water erosion is moderate and the hazard of soil blowing is slight.

Reakor-Pecos Association (RH): This association occurs in valleys between low hills in limestone area. Slopes are 0 to 3 percent. Runoff is medium or slow. The hazard of water erosion is moderate and the hazard of soil blowing is slight.

Tencee-Upton Complex (Tg): The Tencee series consists of well drained soils that are very shallow to shallow to indurated caliche. This soil unit is found on nearly level to gently rolling soils on upland ridges. Slopes are 0 to 9 percent. Permeability is moderate and available water capacity is 1 to 2 inches. Effective rooting depth is indurated caliches is 6 to 20 inches. Runoff is medium the hazard of water erosion is moderate and the hazard of soil blowing is slight.

Upton-Atoka association (UA): This series of soils are well drained and are very shallow and shallow to indurated caliche. They form in gravelly and cobbly alluvium on uplands. Slopes are 0 to 5 percent. Permeability is moderate and available water capacity is 1 to 2 inches. Effective rooting depth to indurated caliche is 6 to 20 inches. The nearly level to undulating Upton soils is found on ridges and the Atoka loams are found in depressions. Runoff is medium. The hazard of water erosion is moderate and the hazard of soil blowing is slight.

Environmental Impacts

Under the Proposed Action (no action), livestock would remove some of the cover of standing vegetation and litter, and compact the soil by trampling. If livestock management were inadequate, these effects could be severe enough to reduce infiltration rates and increase runoff, leading to greater water erosion and soil losses (Moore et al. 1979, Stoddart et al. 1975). Producing forage and protecting the soil from further erosion would then be more difficult. The greatest impacts of removing vegetation and trampling would be expected in areas of concentrated livestock use, such as trails, waters, feeders, and shade.

Under the Proposed Action (no action), rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion. Low/moderate forage quality plants provide protection to the soils resource. Cumulative long term monitoring data reflect the soils are being adequately protected.

Under No-Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become

decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Mitigation

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Continued rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion.

3. Watershed – Hydrology

Affected Environment

The watershed and hydrology in the area is affected by land and water use practices. The degree to which hydrologic processes are affected by land and water use depends on the location, extent, timing and the type of activity. Factors that currently cause short-lived alterations to the hydrologic regime in the area include livestock grazing management, recreational use activities, groundwater pumping and also oil and gas developments such as well pads, permanent roads, temporary roads, pipelines, and powerlines.

Environmental Impacts

Livestock grazing management and range improvement projects can result in long-term and short-term alterations to the hydrologic regime. Peak flow and low flow of perennial streams, ephemeral, and intermittent rivers and streams would be directly affected by an increase in impervious surfaces resulting from the construction of range improvement projects. The potential hydrologic effects to peak flow is reduced infiltration where surface flows can move more quickly to perennial or ephemeral rivers and streams, causing peak flow to occur earlier and to be larger. Increased magnitude and volume of peak flow can cause bank erosion, channel widening, downward incision, and disconnection from the floodplain. The potential hydrologic effects to low flow is reduced surface storage and groundwater recharge, resulting in reduced baseflow to perennial, ephemeral, and intermittent rivers and streams. The direct impact would be that hydrologic processes may be altered where the perennial, ephemeral, and intermittent river and stream system responds by changing physical parameters, such as channel configuration. These changes may in turn impact chemical parameters and ultimately the aquatic ecosystem.

Long-term direct and indirect impacts to the watershed and hydrology would continue for the life of the livestock grazing management and range improvement projects and would decrease once reclamation of the range improvement projects has taken place. Short-term direct and indirect impacts to the watershed and hydrology from access roads that are not surfaced with material would occur and would likely decrease in time due to reclamation efforts.

Under the Proposed Action, rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the hydrologic regime. Low/moderate forage quality plants provide protection to the soils resource and hydrologic regime. Cumulative long-term monitoring data reflect the hydrologic regime is being adequately protected.

Under the No-Grazing Alternative, any adverse impact from livestock grazing management and range improvement projects would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Mitigation

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Continued rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion.

4. Floodplains

Affected Environment

Portions of the grazing allotment are located in the 100-year floodplain. For administrative purposes, the 100-year floodplain serves as the basis for floodplain management on public lands. It is based on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (1983) which describes a Zone A as the "Area of the 100-year flood". Current development on the floodplain consists of two-track roads and several miles of boundary fence in the area.

Environmental Impacts

Surface disturbance from the development of surface facilities and buried pipelines can result in impairment of the floodplain values from removal of vegetation, removal of wildlife habitat, impairment of water quality, decreased flood water retention and decreased groundwater recharge.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the floodplain values. Low/moderate forage quality plants provide protection to the floodplain values. Cumulative long-term monitoring data reflect the floodplain values are being adequately protected.

Under the No Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Mitigation

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Continued rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion.

5. Water Quality

Affected Environment – Surface Water

No perennial surface water is found on the Public Land on this allotment. Ephemeral stream occur on Public Land on these allotments.

Environmental Impacts – Surface Water

Direct impacts to surface water quality would be minor, short-term impacts during stormflow. Indirect impacts to water-quality related resources, such as fisheries, would not occur.

Affected Environment - Ground Water

Fresh water sources are located in the Quaternary Shallow Alluvial Aquifer and the Unconfined San Andres Aquifer. The approximate depth to water in area ranges from 35 to 100 feet in shallow alluvial aquifer and 400 to 600 feet in the San Andres Aquifer (New Mexico Office of the State Engineer Data).

Environmental Impacts – Ground Water

The proposed action would not have a significant effect on ground water. Livestock would be dispersed over the allotment, and the soil would filter potential contaminants.

Under the Proposed Action, rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect surface and groundwater. Low/moderate forage quality plants provide protection to the surface and groundwater. Cumulative long-term monitoring data reflect the surface and groundwater are being adequately protected.

Under the No-Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Mitigation

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Continued rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion.

6. Wildlife

Affected Environment

The allotment provides a variety of habitat types for terrestrial wildlife species. The diversity and abundance of wildlife species in the area is due to the presence of a mixture of grassland, mixed desert shrub and drainage and draws habitats.

Numerous avian species use the area during spring and fall migration, including non-game migratory birds. Common bird species are mourning dove, mockingbird, white-crowned sparrow, black-throated sparrow, blue grosbeak, northern oriole, western meadowlark, Crissal thrasher, western kingbird, northern flicker, common nighthawk, loggerhead shrike, and roadrunner. Raptors include northern harrier, Swainson's hawk, American kestrel, and occasionally golden eagle and ferruginous hawk.

Common mammal species using the area include mule deer, pronghorn, coyote, gray fox, bobcat, striped skunk, porcupine, raccoon, badger, jackrabbit, cottontail, white-footed mouse, deer mouse, grasshopper mouse, kangaroo rat, spotted ground squirrel, and woodrat. Resident bats in the area tend to be Townsend's Western Big-eared, Cave Myotis, Small-footed Bat and Mexican Freetail. None of these bat species are threatened or endangered. A variety of herptiles also occur in the area such as yellow mud turtle, box turtle, eastern fence lizard, side-blotched lizard, horned lizard, whiptail, hognose snake, coachwhip, gopher snake, rattlesnake, and spadefoot toad.

Environmental Impacts

Under the Proposed Action (no action), livestock grazing management and range improvement projects designed with consideration for wildlife may generally enhance the quality of wildlife habitat. The larger blocks of public land with legal public access could lend themselves to specific wildlife objectives and projects that could be incorporated into the grazing management operation.

Vegetation condition, forage production, and habitat diversity may improve, and wildlife species distribution and abundance may remain static or possibly increase depending on the grazing management regime. The construction of livestock waters in previously unwatered areas would promote increased wildlife distribution and abundance, but may potentially increase grazing pressure in those same areas. Short-term impacts of range improvement projects would be the temporary displacement of wildlife species during possible range improvement construction activities.

White Nose Syndrome and Identified Hibernacula

A situation that has arisen since preparation of the 1997 RMP and 1998 EA is the threat of White Nose Syndrome (WNS). White Nose Syndrome) was first documented in 2006 on hibernating bats in New York state and by 2014 it had moved over 2,000 miles across 26 states and 5 Canadian provinces and had killed well over 8 million bats. By spring of 2010, White Nose Syndrome (WNS) is now located in western Arkansas, just across north Texas from New Mexico.

Mitigation

Due to prevailing drought conditions in the RFO, authorized use including the proposed AUMs for public lands, must be closely monitored to prevent undue habitat degradation from continued livestock grazing pressure. During the ten-year permit period, it is expected that a voluntary reduction or non-use would be requested by the permittee during droughty periods. A close eye on vegetation condition on a growing seasons basis is required to prevent undue degradation from continued grazing pressure during periods of drought to allow for suitable habitat conditions (standing crop) for a variety of wildlife species.

Under the No-Grazing Alternative, there would no longer be direct competition between livestock and wildlife for forage, browse and cover. Wildlife habitat would moderately improve. The limitation for improvement would continue to be the inability to control livestock use of the parcels because of the expense of segregating the lands with fencing, and legal access to administer isolated parcels of public land. Since livestock grazing would not be permitted, range improvement projects that benefit wildlife, such as water developments, would be abandoned. New range improvement projects that would also benefit wildlife habitat, such as brush control, may not be implemented because these projects are primarily driven and funded through range improvement efforts.

7. Threatened and Endangered Species / Special Status Species

Affected Environment

Under Section 7 of the Endangered Species Act of 1973 (as amended), BLM is required to consult with the U.S. Fish and Wildlife Service on any proposed action which may affect Federal listed threatened or endangered species or species proposed for listing. The Roswell Field Office wildlife biologist reviewed and determined the proposed actions are in compliance with listed species management guidelines outlined in the 1997 Biological Assessment (Cons. #2-22-96-F-102). No further consultation with the Service is required. A current list of federal threatened or endangered species reviewed for this EA can be found on file at the Roswell Field Office which updates Appendix 11 of the Roswell Approved RMP (AP11-2). No known threatened or endangered species of plant or animals occur in the proposed project areas.

In accordance with BLM Manual 6840, BLM manages certain sensitive species not federally-listed as threatened or endangered in order to prevent or reduce the need to list them as threatened or endangered in the future. Included in this category are State-listed threatened or endangered species and federal candidate species which receive no special protections under the Endangered Species Act. A current list of State species and BLM sensitive species reviewed for this EA can be found on file at the Roswell Field Office which updates Appendix 11 of the Roswell Approved RMP (AP11- 3 & 4, respectively). The only known special status species that may occasionally occur in the area of analysis are wintering bald eagles.

Environmental Impacts

Threatened and Endangered Species – None

Special Status Species - Under the proposed action, habitat for wintering bald eagles would not have significant negative impacts by livestock grazing since there is no presence of riparian habitats nearby, and no active or suitable nesting habitat. Positive impacts may result to the bald eagle from the proposed action by increasing the amount of carrion during the late winter and early spring on sheep allotments in the vicinity. Under the no grazing alternative, there would be no impact to special status species or their habitat.

8. Air Quality

Affected Environment

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. Regulation of air quality is also delegated to some states. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility.

The allotments are in an area that is considered a Class II air quality area. A Class II area allows moderate amounts air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soil and exhaust emissions from motorized equipment. Air quality in the area is generally good and is not located in any of the areas designated by the Environmental Protection Agency as "non-attainment areas" for any listed pollutants regulated by the Clean Air Act.

Air quality in the region is generally good, with winds averaging 10-16 miles per hour depending on the season. Peak velocities reach more than 50 miles per hour in the spring. These conditions rapidly disperse air pollutants in the region.

Environmental Impacts

Air quality would temporary be directly impacted with pollution from enteric fermentation (ruminant livestock), chemical odors, and dust. Dust levels resulting from allotment management activities would be slightly higher under the Proposed Action than No-Grazing

Alternative. The cumulative impact on air quality from the allotment would be negligible compared to all pollution sources in the region.

The federal Clean Air Act requires that air pollutant emissions be controlled from all significant sources in areas that do not meet the national ambient Air quality standards. The New Mexico Air Quality Bureau (NMAQB) is responsible for enforcing the state and national ambient air quality standards in New Mexico. Any emission source must comply with the NMAQB regulations At the present time, the counties that lie within the jurisdictional boundaries of the Roswell Field Office are classified as in attainment of all state and national ambient air quality standards as defined in the Clean Air Act of 1972, as amended (USDI, BLM 2003b).

The Environmental Protection Agency (EPA), on October 17, 2006, issued a final ruling on the lowering of the National Ambient Air Quality Standard (NAAQS) for particulate matter ranging from 2.5 micron or smaller particle size. This ruling became effective on December 18, 2006, stating that the 24-hour standard for PM2.5, was lowered to 35 ug/m^3 from the previous standard of 65 ug/m^3. This revised PM2.5 daily NAAQS was promulgated to better protect the public from short-term particle exposure. The significant threshold of 35 ug/m^3 daily PM2.5 NAAQS is not expected to be exceeded under the proposed action.

9. Climate

Affected Environment

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. GHG's and the potential effects of GHG emissions on climate are not regulated by the EPA, however climate has the potential to influence renewable and non-renewable resource management.

Greenhouse gases, including carbon dioxide (CO2) and methane (CH4), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, climate has the potential to influence renewable and non-renewable resource management. The EPA's Inventory of US Greenhouse Gas Emissions and Sinks found that in 2006, total US GHG emissions were over 6 billion metric tons and that total US GHG emissions have increased by 14.1% from 1990 to 2006. The report also noted that GHG emissions fell by 1.5% from 2005 to 2006. This decrease was, in part, attributed to the increased use of natural gas and other alternatives to burning coal in electric power generation.

The levels of these GHGs are expected to continue increasing. The rate of increase is expected to slow as greater awareness of the potential environmental and economic costs associated with increased levels of GHG's result in behavioral and industrial adaptations.

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring systems, it is difficult to determine the spatial and

temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

In 2001, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2006) supports these predictions, but has acknowledged that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures is more likely than increases in daily maximum temperatures.

A 2007 US Government Accountability Office (GAO) Report on Climate Change found that, "federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others: 1) physical effects such as droughts, floods, glacial melting, and sea level rise; 2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and 3) economic and social effects, such as adverse impacts on tourism, infrastructure, fishing, and other resource uses." It is not, however, possible to predict with any certainty regional or site specific effects on climate relative to the proposed lease parcels and subsequent actions.

In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50% since the 1970's (Enquist and Gori). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the state.

Environmental Impacts

Climate change analyses are comprised of several factors, including greenhouse gases (GHGs), land use management practices, the albino effect, etc. The tools necessary to quantify climatic impacts from the Proposed Action are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis for the purpose of this document is limited to accounting and disclosing of factors that may contribute to climate change. Qualitative and/or quantitative evaluation of potential contributing factors within the planning area is included where appropriate and practicable.

Mitigation

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion which would decrease dust levels resulting from allotment management activities.

10. Livestock Management

Affected Environment

In the past, this allotment has been permitted to be grazed yearlong by cattle, with a small percentage of horses. Generally there are only enough horses authorized to work stock. The permit authorized 300 AUs. The allotment contains about 6,061 acres of public land (see Location Map) and 9,959 acres of private and state land. Public landownership is intermingled with private and state land. Current range improvement projects for the management of livestock include earthen tanks, wells, and several drinking troughs with associated pipelines, pasture and boundary fences and corrals.

Environmental Impacts

Under the Proposed Action, livestock would continue to graze public lands within the allotment. Existing pasture configurations and water developments would remain the same. Livestock management would still follow the single-herd rotation system or in dry conditions would be scattered across the allotment.

Under No-Grazing Alternative, there would be no livestock grazing authorized on public lands. The public lands would have to be fenced apart from the private lands or livestock would be considered in trespass if found grazing on public land (43 CFR 4140.1(b)(1)). Exclusion of livestock from the public land would require approximately 15 miles of new fence at an approximate cost of $67,500.00 ($4,500/mile). This expense would be borne by the private landowner. Range improvements on public land would not be maintained and the BLM would have to compensate the permittee if any of the improvements were cost shared at the time of their authorization.

Under No-Grazing Alternative, the overall livestock operation could be reduced by 110 AUs (those attached to the public lands) to approximately 190 AUs. This would have an adverse economic impact on the permittee and Chaves County would lose the tax revenue for the stock associated with the public lands.

Cumulative impacts of the grazing and no grazing alternatives were analyzed in Rangeland Reform ‘94 Draft Environmental Impact Statement (BLM and USDA Forest Service 1994) and in the Roswell Resource Area Draft RMP/EIS (BLM 1994). The no livestock grazing alternative was not selected in either document.

11. Visual Resource Management

Affected Environment

The setting presents a winter gray color pattern and in warm months, with foliage, a gray to gray-green color pattern. Wide-area landscape tends to be horizontal in line and flat in form, with a smooth texture. The allotment is in a Class IV area for visual resources management. The proposed actions are located within a designated VRM Class IV area. The objective of Class IV

is to: "Provide for management activities which require major modification of the existing landscape character...Every attempt, however, should be made to reduce or eliminate activity impacts through careful location, minimal disturbance, and repeating the basic landscape elements."

Environmental Impacts

The basic landscape elements of form, line color and texture would not change within the allotment under any management alternative. Potential impacts to visual resources would be analyzed and mitigated as allotment management activities are proposed in the future.

Mitigation

Range facilities such as windmills and fences tend to be a translucent grey in color and blend favorably with grey and grey-green settings, To further blend favorably with the setting facilities would be low profile, and painted the flat grey-green color **Oil Green (Pantone Formula 17-0115 TPX)**. Other translucent colors, such as juniper green and brown can be used, as long as they blend with the setting.

12. Recreation

Affected Environment

The allotment provides habitat for numerous game species including desert mule deer, pronghorn, mourning dove and scaled quail. Predator and feral pig hunting may occur on the allotment, as well as trapping for predators or furbearers. General sightseeing, wildlife viewing, caving and photography are non-consumptive recreational activities that may occur.

Environmental Impacts

Under the Proposed Action, game and non-game wildlife species could realize long-term benefits through the improvement of habitat. It is expected that hunter success and wildlife viewing opportunities would be enhanced.

Under No-Grazing Alternative, no conflicts between ranching activities and recreational use would occur on public lands. Success of hunts and non-consumptive opportunities would remain the same or slightly improve. Vandalism could still occur to range improvements. Conflicts with OHV use would continue.

13. Karst

Affected Environment

The allotment is located within a designated area of High Karst or Cave Potential. An inventory of significant cave or karst features has not been completed for public land located in this grazing allotment.
There are sinkholes documented in this area. Karst features are derived from dissolved limestone and gypsum from which caves and sinkholes can form, under the definition of caves in the Federal Cave Resource Protection Act of 1988.

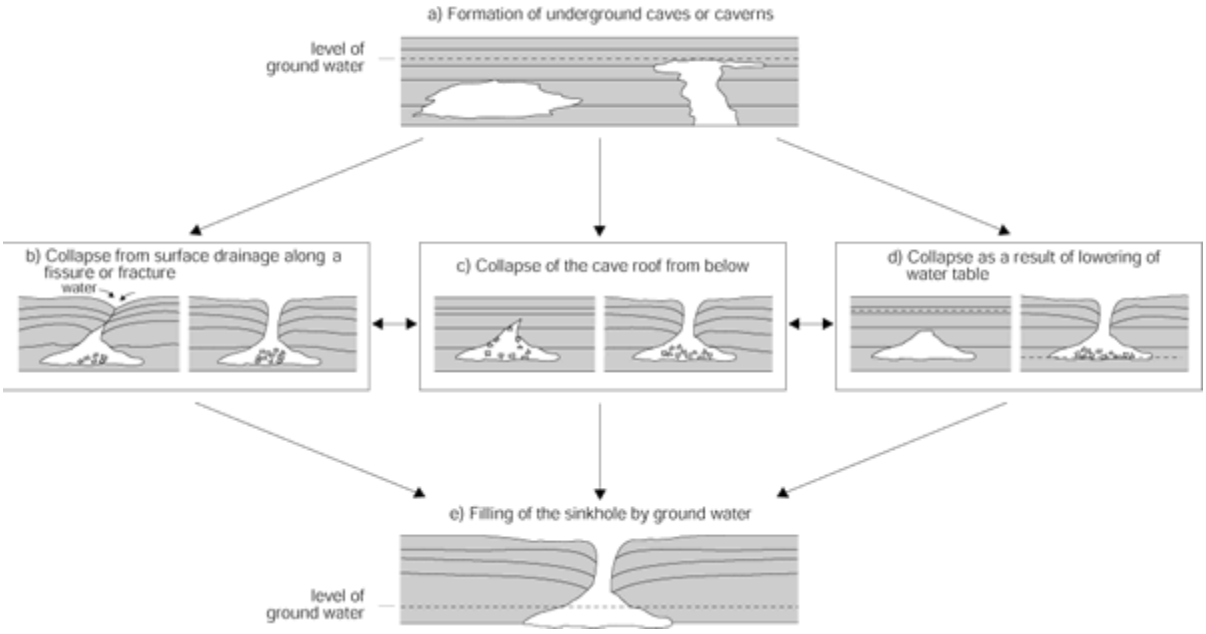
Environmental Impacts

Over the years, a number of sinkholes in this allotment have had trash and hazardous materials dumped in them from the ranching and oil and gas industries. Sinkholes are a direct conduit to the water table. Livestock grazing could be affected by the presence of karst features if livestock became entrapped in deep sinkholes, which has occurred with sheep grazing in the proposed action area. This could be prevented by creating exclosures around identified karst features that pose a hazard to livestock. In the event that range improvement projects are proposed, the presence of karst features would be further analyzed in related environmental assessments.

Mitigation

✱A separate Environmental Analysis would be prepared to construct an exclosure fence.

✱In the event that range improvement projects are proposed, the presence of karst features would be further analyzed in related environmental assessments.



Sinkhole Development
(http://geoinfo.nmt.edu/tour/state/bottomless_lakes/home.html)

❋If at a later date, more significant caves or karst features are found on public land within the allotment, that cave or feature may be fenced to exclude livestock grazing and Off Highway Vehicle Use.

❋Any cave or karst feature, such as a deep sinkhole, discovered by the co-operator/contractor or any person working on the co-operator's/contractor behalf, on BLM-managed public land shall be immediately reported to the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate action(s). Any decision as to the further mitigation measures will be made by the Authorized Officer after consulting with the co-operator/contractor.

14. **Cultural Resources**

Affected Environment

The project falls within the Southeastern New Mexico Archaeological Region. This region contains the following cultural/temporal periods: Paleoindian (ca. 12,000-8,000 B.C.), Archaic (ca. 8000 B.C. –A.D. 950), Ceramic (ca. A.D. 600-1540) Protohistoric and Spanish Colonial (ca. A.D. 1400-1821), and Mexican and American Historical (ca. A.D. 1822 to early 20th century). Sites representing any or all of these periods are known to occur within the region. A more complete discussion can be found in Living on the Land: 11,000 Years of Human Adaptation in Southeastern New Mexico An Overview of Cultural Resources in the Roswell District, Bureau of Land Management published in 1989 by the U.S. Department of the Interior, Bureau of Land Management. A cultural resource inventory shall be conducted of the area of effect for the proposed project prior to any ground disturbing activities.

Concerning cultural resources, grazing has the potential for impacts. The Roswell Field Office reviews the local office and NMCRIS databases for every grazing permit or leasing action at all levels of NEPA. In situations where sensitive sites lie within an allotment, site specific visits may be conducted to assess the presence of effects.

Environmental Impacts

Six surveys and five sites have been reported in this allotment. Currently, there is no evidence that grazing activities at this intensity have adversely impacted any cultural resources; however, unforeseen impacts may occur.

Mitigation

Any future range improvement involving earth disturbing activities will require a cultural inventory prior to approval.

15. **Native American Religious Concerns**

Affected Environment

Native American groups may have places that can be described as Traditional Cultural Properties or other places that are important to their religions or cultures. The BLM uses the New Mexico Department of Cultural Affairs list of tribes/nations/pueblos concerned for individual counties to determine which of these groups may have concerns for projects. To date, the areas to be affected by the current project have not been identified by interested tribes as being of tribal concern.

Environmental Impacts

The BLM conducts tribal consultation for many projects while preparing planning documents such as the Resource Management Plan and Resource Management Plan Addendums. A review of existing information indicates the proposed action is outside any known Traditional Cultural Property.

16. Paleontology

The BLM manages paleontological resources for their scientific, educational, and recreational values in compliance with the Paleontological Resources Preservation Act (PRPA) of 2009. The PRPA affirms the authority for many of the policies the Federal land managing agencies already have in place for the management of paleontological resources such as issuing permits for collecting paleontological resources, curation of paleontological resources, and confidentiality of locality data. The statute provides authority for the protection of paleontological resources on Federal lands including criminal and civil penalties for fossil theft and vandalism.

The BLM classifies geologic formations to indicate the likelihood of significant fossil occurrence (usually vertebrate fossils of scientific interest) according to the Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands (IM 2008-011). These classifications, Classes 1 to 5, determine the procedures to be followed prior to granting a paleontological clearance to proceed with a project.

All paleontological resource stipulations will be followed as indicated in the attached COAs. These stipulations may include, but are not limited to, altering the location or scope of the project, permanent fencing or other physical, temporary barriers, monitoring of earth disturbing construction, project area reduction or specific construction avoidance zones, and fossil recovery. If the assessment of proposed action indicates a reasonable expectation of adverse impacts to significant paleontological resources, a field survey will be necessary to properly document and recover any fossil material and associated data. Upon review, a determination for final project clearance and stipulations shall be issued by the BLM RFO.

Environmental Impacts

The Potential Fossil Yield Classification (PFYC) data indicate the Proposed Action is within an area designated as Class II. The Proposed Action would not affect any known scientifically significant paleontological resources, however, surface disturbing activities and increased human access could produce unexpected discoveries and potential paleontological resource damage. Direct impacts could include damage or destruction during construction, with subsequent loss of information. Indirect impacts would include fossil damage or destruction by erosion due to surface disturbance.

Mitigation

If previously undocumented paleontological sites are encountered during surface disturbing activities, the project proponent will immediately stop all surface disturbing activities in the immediate vicinity of the discovery. The proponent with then immediately notify the paleontological monitor (if required) or the BLM RFO paleontology resource staff. It is necessary to protect fossil material and their geological context upon discovered during surface disturbing activities. The BLM RFO paleontology resource staff would then evaluate the site. Should the discovery be evaluated as significant, it will be protected in place until mitigation measures can be developed and implemented according to guidelines set by the BLM. Mitigation measures such as data and fossil recovery may be required by the BLM to prevent impacts to newly identified paleontological resources.

B. CUMULATIVE IMPACTS

A cumulative impact is defined in 40 CFR 1508.7 as:

> "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The specific resources being impacted are limited to those that are most important in terms of impacts resulting from remedial actions needing to be implemented to improve current environmental conditions.

The incremental impact of issuing a grazing lease on these resources must be analyzed in the context of impacts from other actions. Other BLM actions that could have impacts on the identified resources include: livestock authorization on other allotments in this area; oil and gas activities on the uplands; rights-of-way crossing the area; and recreation use, particularly off-highway vehicles. All authorized activities which occur on BLM land can also take place on state and private land.

Many of the actions which could contribute to cumulative impacts have occurred over many years. Impacts from open-range livestock grazing in the last century are still being addressed today. Cattle grazing combined with the current drought conditions will continue to decrease native vegetation root structure increasing soil erosion and loss of wildlife habitat. These activities are still occurring today, and are expected to continue into the foreseeable future to some degree. The analysis of cumulative impacts is driven by major resource issues. The proposed action is the authorization of livestock grazing on these allotments. The cumulative impacts to these allotments and adjacent allotments are insignificant.

The Proposed Action (no action) would not add incrementally to the cumulative impacts to threatened and endangered species, or to water quality. The conclusions, that impacts to these resources from grazing authorization would not be significant are discussed in detail in Section III of the EA. If the No-Grazing Alternative were chosen, some adverse cumulative impacts would be eliminated, but others would occur. Grazing would no longer be available as a vegetation management tool, and BLM lands within the allotment would be less intensively managed.

While global and national inventories of GHG are established, regional and state-specific inventories are in varying levels of development. Quantification techniques are in development – for example, there is a good understanding of climate change emissions related to fuel usage; however measuring and understanding the effects are less comprehensive. Analytical tools necessary to quantify climatic impacts are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined.

Due to the absence of regulatory requirements to measure GHG emissions it is not possible to accurately quantify potential GHG emissions in the affected areas as a result of renewing grazing leases. Some general assumptions however can be made: livestock, operating vehicles to support livestock grazing, and vehicles transporting livestock contribute to GHG emissions.

The New Mexico Greenhouse Gas Inventory and Reference Case Projection 1990-2020 (Inventory) states agricultural activities, including manure management, fertilizer use and livestock account for 7% of New Mexico's total GHG emissions. The Inventory estimates approximately 6.4 million metric tons GHG emissions are projected by 2010 from all agricultural activities in the state. The Inventory states that GHG emissions from livestock, agriculture soil management and field burning were about 6.2 MMT of CO_2 equivalents in 2004. The Inventory makes the assumption that dairy cattle production will grow at the same rate as the general population and no growth in the other categories within agriculture.

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. However, potential impacts to natural resources and plant and animal species due to climate change are likely to be varied, including those in the southwestern United States. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated.

Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at lower elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependent on historic water conditions. Forests at higher elevations in New Mexico, for example, have been exposed to warmer and drier conditions over a ten year period. Should the trend continue, the habitats and identified drought sensitive species in these forested areas and higher elevations may also be more affected by climate change.

C. MITIGATION MEASURES

Vegetation monitoring studies will continue if a new grazing permit was issued under the Proposed Action. Changes to livestock management would be made if monitoring data showed adverse impacts to the vegetation. If new information surfaces that livestock grazing is negatively impacting other resources, action will be taken at that time to mitigate those impacts.

D. RESIDUAL IMPACTS

Residual impacts are direct, indirect, or cumulative impacts that would remain after applying the mitigation measures. Residual impacts following authorization of livestock grazing would be insignificant if the mitigation measures are properly applied.

E. SOCIO-ECONOMIC FACTORS

The Proposed Action as outlined in this document is not anticipated to alter the socio-economic conditions for either the permittee or Chaves County. Should the No-Grazing Alternative be adopted, economic impacts would occur. Chaves County would lose tax revenues on approximately 110 head of cattle. This would be the number of livestock associated solely with the public land.

Under the No-Grazing Alternative, it would be the responsibility of the permittee to prevent livestock from grazing on the public lands. To accomplish this, the permittee would most likely have to construct fences to exclude the public land. Approximately 15 miles of new fence would be needed at a cost of approximately $67,500 ($4,500/mile). BLM would also have to provide compensation to the permittee for their interest in authorized range improvements due to the exclusion of livestock grazing. These costs could be reduced or mitigated by land exchanges with either the state or the permittee to block up the public land.

Chapter 4 - Consultation and Coordination

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PERSONS AND AGENCIES CONSULTED

New Mexico Department of Game and Fish
New Mexico Energy, Minerals, and Natural Resources Department - Forestry and Resource Conservation Division
New Mexico Environment Department - Surface Water Quality Bureau
New Mexico State Land Office
U.S. Fish and Wildlife Service - Ecological Services
U.S. Fish and Wildlife Service - Fishery Resources Office
Allottee of Allotment 64073

LITERATURE CITED

Bureau of Land Management. 1994. Roswell Resource Area Draft Resource Management Plan/Environmental impact statement. BLM-NM-PT-94-0009-4410.

Bureau of Land Management. 1997. Roswell Approved Resource Management Plan and Record of Decision. BLM-NM-PT-98-003-1610. 71 pp.

Bureau of Land Management and USDA Forest Service. 1994. Rangeland Reform '94, Draft Environmental Impact Statement.

Enquist, Carolyn and Gori, Dave. 2008. Implications of Recent Climate Change on Conservation Priorities in New Mexico. April 2008.

Federal Emergency Management Agency. 1983. Flood Insurance Rate Map. Community Panel Nos. 350125 0450B and 0475B.

Geohydrology Associates, Inc. 1978. Collection of Hydrologic Data, Eastside Roswell Range EIS area, New Mexico. Prepared for BLM under Contract No. YA-512-CT7-217. 97 pp.

GISS Surface Temperature Analysis, Analysis Graphs and Plots. New York, New York. (Available on the Internet: http://data.giss.nasa.gov/gistemp/graphs/Fig.B.lrg.gif.)

Goddard Institute for Space Studies. 2007. Annual Mean Temperature Change for Three Latitude Bands Datasets and Images.

Hogge, David. 1998. Personal communication. New Mex. Env. Dept., Surface Water Qual. Bur.

Hudson, J.D. and R.L. Borton. 1983. Ground-water Levels in New Mexico, 1978-1980. NM State Engr. Basic Data Rep. 283 pp.

H.R. 1975--100th Congress: Federal Cave Resources Protection Act of 1988. www.GovTrack.us. 1987. March 12, 2014 <http://www.govtrack.us/congress/bills/100/hr1975>2003.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Basis (Summary for Policymakers). Cambridge University Press. Cambridge, England and New York, New York. (Available on the Internet: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf)

_____. Climate Change 2007, Synthesis Report. A Report of the Intergovernmental Panel on Climate Change.

Moore, E., E. Janes, F. Kinsinger, K. Pitney, and J. Sainsbury. 1979. Livestock Grazing Management and Water Quality Protection - State of the Art Reference Document. EPA 910/9-79-67. Environmental Protection Agency. Seattle, WA. 147 pp.

National Academy of Sciences. 2006. Understanding and Responding to Climate Change: Highlights of National Academies Reports. Division on Earth and Life Studies. National Academy of Sciences. Washington, D.C. (Available on the Internet: http://dels.nas.edu/basc/Climate-HIGH.pdf.)

New Mexico Department of Game and Fish. 1988. Handbook of Species Endangered in New Mexico. G-253:1-2. Santa Fe.

New Mexico Department of Game and Fish. 1997. Biota Information System of New Mexico (BISON-M). Version 9/97.

New Mexico Environment Department. 1998a. Record of Decision Concerning the Development of Total Daily Maximum Loads For Segments 2206 and 2207 of the Pecos River. Surf. Water Qual. Bur., Plan. and Eval. Sec. Santa Fe.

New Mexico Environment Department. 1998b. 1998-2000 State of New Mexico §303(d) List For Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs), Final Record of Decision (ROD) for River/Stream Listings. Surface Water Quality Bur. Santa Fe. 30 pp.

New Mexico State Engineer. 1995. Rules and Regulations Governing Drilling of Wells and Appropriation and Use of Ground Water in New Mexico. 166 pp.

New Mexico Water Quality Control Commission. 1996. *Water Quality and Water Pollution Control in New Mexico*. NMED/SWQ-96/4. 163 pp.

New Mexico Water Quality Control Commission. 1995 State of New Mexico Standards for I interstate and Intrastate Streams. 20 NMAC 6.1. 51 pp.

PANTONE®Architecture and Interiors Color Specifier and Guide Set. 2003

Rosgen, D. 1996. *Applied River Morphology*. Wildland Hydrology. Pagosa Springs, CO.

Savory, A. 1988. *Holistic Resource Management*. Island Press. Washington, D.C.

Stoddart, L.A., A.D. Smith, and T.W. Box. 1975. Range Management. Third Ed. McGraw-Hill, Inc. New York. 532 pp.

USDA Soil Conservation Service. 1980. Soil Survey of Chaves County, New Mexico, Southern part. 224 pp.

U.S. Environmental Protection Agency. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006. April 2008. USEPA #430-R-08-005.

_____. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Environmental Protection Agency. Washington, D.C.

U.S. Fish and Wildlife Service. 1997. Biological opinion on the Roswell Resource Area Resource Management Plans. Consult. #2-22-96-F-102.

U.S. Government Accountability Office Report "Climate Change, Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources" GAO-07-863, August 2007 (1st paragraph, 1st page, GAO Highlights) at: http://www.gao.gov/news.items/d07863.pdf

Wilkins, D.W. and B.M. Garcia. 1995. Ground-water Hydrographs and 5-year Ground-water-level Changes, 1984-93, for Selected Areas In and Adjacent to New Mexico. U.S. Geol. Survey Open-File Rep. 95-434. 267 pp.

Wilson, L. 1981. Potential for Ground-water Pollution in New Mexico. New Mex. Geol. Soc., Spec. Pub. No. 10

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☐Resources ☐Minerals	Not Present	No Impacts	May Be Impacts	Mitigation Included	BLM Reviewer	Date
Air Quality	☐	☐	☒	☒	SWA Spec/Hydro /s/Michael McGee	3/4/2014
Soil	☐	☐	☒	☒		
Watershed Hydrology	☐	☐	☒	☒		
Floodplains	☐	☐	☒	☒		
Water Quality – Surface	☐	☐	☒	☒		
Water Quality – Ground	☐	☐	☒	☒	/s/Michael McGee Geologist/Hydro	3/4/2014
Cultural Resources	☐	☐	☒	☒	/s Jeremy Iliff Archaeologist	2/26/2014
Native American Religious Concerns	☐	☐	☒	☒		
Paleontology	☐	☐	☒	☒	/s/ Al Collar geologist	2/14/2014
ACEC	☒	☐	☐	☐	/s/Glen Garnand Plan & Environ Spec.	3/18/2014
Farmlands, Prime or Unique	☒	☐	☐	☐	/s/Tate Salas Realty	3/27/2014
Rights-of-Way	☐	☒	☐	☐		
Invasive, Non-native Species	☐	☐	☐	☐	/s/Name Range	Date
Vegetation	☐	☐	☐	☐		
Livestock Grazing	☐	☐	☐	☐		
Wastes, Hazardous or Solid	☐	☒	☐	☐	/s/ Al Collar Geologist	2/14/2014
Threatened or Endangered Species	☒	☐	☐	☐	/s/ D Baggao Wildlife Biologist	2/19/2014
Special Status Species	☒	☐	☐	☐		
Wildlife	☐	☐	☒	☒		
Wetlands/Riparian Zones	☒	☐	☐	☐		
Wilderness	☒	☐	☐	☐	/s/Michael J. Bilbo VRM & Karst Resources	3/12/2014
Recreation	☐	☒	☐	☐		
Visual Resources	☐	☐	☒	☒		
Cave/Karst	☐	☐	☒	☒		
Environmental Justice	☒	☐	☐	☐	/s/ Harley C. Davis EPS	03/24/2014
Public Health and Safety	☒	☐	☐	☐	/s/ Harley C. Davis EPS	03/24/2014
Solid Mineral Resources	☐	☒	☐	☐	/s/ Al Collar Geologist	2/14/2014
Fluid Mineral Resources	☐	☒	☐	☐	/s/ John S. Simitz Geologist	2/18/2014